

Activity:	3.9 Develop Software Quality Assurance Plan
Responsibility:	Project Manager and Quality Assurance Manager
Description:	<p>The software quality assurance program involves the reviewing and auditing of the software products and activities to verify that they comply with the applicable procedures and standards and to assure the production and operation of high quality products according to stated requirements. The results of these reviews and audits provide the project manager and other appropriate managers with appropriate visibility into the processes used.</p> <p>The software quality assurance program is initiated at the beginning of a project and is conducted throughout the software engineering lifecycle. The software quality assurance program is the joint responsibility of the project manager and quality assurance manager with direct support and involvement from the quality assurance representatives assigned to the project. Software Quality Assurance includes the following activities:</p> <ul style="list-style-type: none">• Preparation of a Software Quality Assurance Plan for the project according to a documented procedure and coordinated with the designated project team members.• Establishment of a reporting channel regarding software quality assurance.• Allocation of adequate resources and funding to maintain and perform software quality assurance activities.• Provision of formal training for the software quality assurance representatives to perform their activities.• Provision of orientation training in the role, responsibilities, authority and value of software quality assurance to project software developers.• Performance of software quality assurance activities in accordance with the Software Quality Assurance Plan.• Participation by software quality assurance representatives in the preparation and review of the Projects Plan, standards, and procedures.• Reviews by the software quality assurance representatives of the software engineering activities to verify compliance.

**Description,
continued:**

- Audits by software quality assurance representatives of designated work products to verify compliance.
- Periodic reports by software quality assurance representatives of the results and work products of software quality assurance activities to the project team.
- Documentation of deviations identified in the project activities and work products and handled in accordance with a documented procedure.
- Use of measurement and analysis techniques to determine the cost and schedule status of the software quality assurance activities.
- Periodic reviews by independent software quality assurance representatives of the activities and software work products of the projects software quality assurance program.

Software quality assurance personnel work with the project manager during early stages to establish plans, standards, and procedures that will add value to the software product and satisfy the constraints of the project and the organization's policies. By participating in establishing software quality work products, e.g., the plans, standards, and procedures, the software quality assurance personnel help ensure the work products fit the projects needs and verify that the work products will be usable for performing reviews and audits throughout the project lifecycle.

Compliance issues are first addressed with the project manager and resolved there if possible. For issues not resolvable by the software quality assurance representative and project manager, the issue is escalated to an appropriate level of management for resolution

Work Product:

The quality assurance manager or designated representative assists the project manager with the development of a plan that clearly defines the project's quality assurance policies and procedures. The Software Quality Assurance Plan addresses the following types of activities.

- Establishing the applicability of published standards and procedures and determining the scope of the project standards and procedures.
- Monitoring the software product and enforcement of compliance with all standards and procedures to facilitate the early detection of problems that could affect the reliability, maintainability, availability, integrity, safety, security, or usability of the software product.

**Work Product,
continued:**

- Inspecting hardware and software items and documenting for compliance to specifications and standards before their release to the test team or the system owner.
- Certifying deliverable items before their release to the system owner as compliant with all provisions of the project statement of work and contract, if applicable.
- Coordinating the project's technical problem reporting system and corrective action program to assure resolution of observed discrepancies.
- Measuring the quantitative and auditable progress of the project based on cost, schedule status, and quality status.
- Assuring consistent management and technical practices and the integrity of the software product.

Provide enough information in the plan so that compliance can be monitored by means of project records. Whenever feasible, acquire automated tools to check compliance with project standards. For example, many CASE (computer-aided software engineering) tools can check compliance with standards, while checking the validity and consistency of requirements, design, and logic diagrams.

Review Process:

Conduct a structured walkthrough to validate that the quality assurance policies and procedures are appropriate and adequate for the project.

Resources:

The following resources are available from the Software Management Program Web site to assist with the development of a Software Quality Assurance Plan.

- Software Quality Assurance Plan Template
- Software Quality Assurance Plan Example
- Automated Office Systems Support Quality Assurance Model

The Institute of Electrical and Electronics Engineers Standard for Software Quality Assurance Plans (Std 730-1989) provides guidance on developing these plans.

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